

REMARKS

Reconsideration and allowance are respectfully requested in view of the following remarks. Claims 1-12 remain pending in the application.

Claims 1-6 and 9-11 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kamepalli in view of Chen. Claims 7-8 and 12 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kamepalli in view of Chen and Lien. Applicant respectfully requests reconsideration of the claims in view of the amendments presented above.

In independent claims 1, 7 and 11, Applicants claim operation of the re-configurable unit to perform a circuit modification to establish physical circuit connections so as to implement functional portions within the re-configurable unit that control the expansion module to support the different classes of functions. Such control over the establishment of physical circuit connections is supported in the invention by, for example, the disclosed use of FPGA or the like type circuitry as is known to those skilled in the art. The Examiner points to the controllers F0-F7 of Kamepalli as meeting the claimed circuit modification limitation. Applicants, however, assert that no circuit modification (of the physical type explicitly claimed by Applicants) is performed by, or is even supported or suggested by, Kamepalli.

In support of the foregoing, Applicants first point to the disclosed operation of the PCI Interface 205 (see, col. 4, lines 1-18) which was relied upon by the Examiner as meeting the “re-configurable unit” limitation. Kamepalli teaches that the interface 205 receives a PCI bus command addressed to one of the controllers F0-F7. Responsive thereto, the interface 205 reads the enable/disable register 305 to determine the status of the addressed one of the functions F0-

F7. If the addressed function is enabled, the interface 205 functions in normal manner to respond to the command. If, on the other hand, the addressed function has been disabled, the interface 205 ignores the command. Notably, the interface 205 operations associated with responding or ignoring bus commands do not implicate any form of “circuit modification” of the interface as claimed (i.e., to establish physical circuit connections so as to implement functional portions of the re-configurable unit). Rather, the overall physical circuit configuration of the interface 205 and functions F0-F7, including all its supported interconnections and functional portions, remains the same while the interface 205 processes/ignores bus commands. This disclosed operation in Kamepalli with respect to the interface 205, functions F0-F7 and PCI bus commands thus does not anticipate the claimed limitation relating to the re-configurable unit and a circuit modification to establish physical circuit connections so as to implement functional portions within the re-configurable unit that control the expansion module to support the different classes of functions.

In further support of Applicants’ position, Applicants address the operation of the control logic 207 which the Examiner asserts meets the claimed “control device.” Kamepalli teaches that the control logic 207 functions to write the function F0-F7 configuration information into the enable/disable registers (see, for example, col. 5, lines 32-34, and col. 6, lines 39-41). There is no teaching or suggestion in Kamepalli for having the control logic 207 function to “control the circuit modification of the reconfigurable unit to provide the different classes of functions in support of the user application request” as is specifically claimed by Applicants. The operations performed by the control logic in writing data into the enable/disable registers effectuates control

over a DATA modification, NOT a physical CIRCUIT modification, within the interface 205 and multifunction device 121, as claimed. In fact, as discussed above, the physical circuit implementation of the multifunction device 121, including all supported interconnections within the interface 205 and with respect to the functions F0-F7, is not ever changed by Kamepalli (either through the PCI Interface 205 or the control logic 207). Rather, certain functions can be set as enabled or disabled, and then the PCI Interface 205 simply responds thereto by handling or ignoring, respectively, PCI bus commands.

While the Kamepalli multifunction device 121 is reconfigurable with respect to the enable/disable status of the functions F0-F7 (and thus the availability of each function), it is clear that Applicants claim more than just simple reconfigurability. What is specifically claimed is that reconfiguration involves a physical circuit modification to establish physical circuit connections so as to implement functional portions within the re-configurable unit that control the expansion module to support the different classes of functions. No such physical circuit modification in support of reconfigurability and functional portion implementation to control operation is disclosed or suggested by Kamepalli. In view of the foregoing, Applicants respectfully submit that the prima facie case under Section 103 is not supported by the citation to Kamepalli with respect to either the reconfigurable unit (FPGA) or control device limitations recited by independent claims 1, 7 and 11. Withdrawal of the Section 103 rejection is accordingly requested.

In the claimed invention, the “re-configurable unit adapted to be circuit modified” allows for the physical circuitry of the reconfigurable unit to be adapted or changed to support other,

new and/or changing functional portions of the re-configurable unit that control operation of the expansion module to support the different classes of functions. This type of operation is not supported or suggested by the static, software driven enable/disable operation of the interface 205 or the static provision and interconnection of functions F0-F7 within Kamepalli's multifunction device 121. There are no "functional portions" of Kamepalli's interface 205 which are implemented through physical **circuit** modifications as claimed. Rather the functional portions of the interface 205 are simply **data** enable/disable driven.

As an example illustrating operation of Applicants' claimed invention, the specification teaches that the re-configurable unit (in this case implemented through a FPGA) can be circuit configured to support and control the occurrence of two functions (such as voice synthesis and voice command), with the circuit being adapted to support a switching between those functions on the request of the executing application. Such an operation to circuit reconfigure the interface 205 and multifunction device 121 so as to implement functional portions of the disclosed type that support and control operation and provision of multiple functions and the switching therebetween responsive to the executing application is neither disclosed nor suggested by Kamepalli.

Turning next to claim 2, Applicants submit that the claimed method step of "automatically reconfiguring physical circuit interconnections within the expansion module so as to implement functional portions thereof which control the expansion module to provide the new function requested" is neither disclosed nor suggested by the multifunction device 121 (or its interface 205 and control logic 207) of Kamepalli for at least the same reasons as recited above.

With respect to the issue of the use of “a field programmable gate array” as recited in claims 7-8 and 12, the Examiner asserts that it would have been obvious to utilize field programmable gate array as the reconfigurable device. Applicants respectfully object to the proposed combination of references because, as discussed above, no teaching or suggestion exists in Kamepalli to implement any form of physical circuit modifications so as to implement functional portions that control operation. Thus, there is no reason for one skilled in the art to even consider the Lien FPGA teachings. If a FPGA were used in Kamipalli, it would merely be used to achieve data driven the functional operations of the interface 205 (process or ignore bus commands based on enable/disable status) or control logic 207 (write enable/disable configuration information). Neither of these operations, as discussed above, teaches or suggests the claimed “circuit modification to establish physical circuit connections so as to implement functional portions within the re-configurable unit that control the expansion module to support the different classes of functions.” Thus, the claimed invention is patentable over the cited prior art.

CUSTOMER NO. 23932

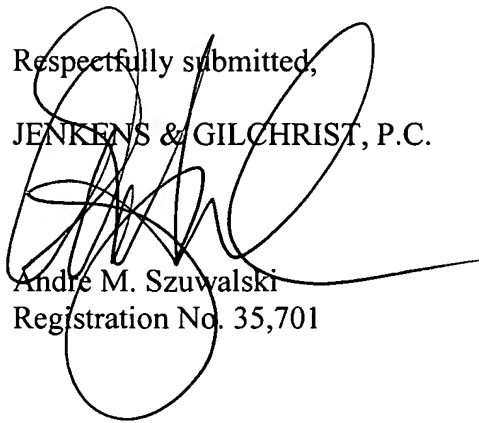
PATENT APPLICATION
Docket No. 61181-3uspx

In view of the above, it is believed that this application is in condition for allowance, and such a Notice is respectfully requested.

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